

LE “LOUIE” CAI

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EDUCATION

University of California, San Diego, Data Science B.S.

Sept 2020 – June 2024

- **GPA:** 3.7
- **Relevant Coursework:** Machine Learning, Deep Learning, NLP, Data Analysis, Computer Organization and Systems Programming, Data Structures & Object-Oriented Design, Differential Equations, Linear Algebra, Probability and Statistics, Discrete Mathematics

SKILLS

- **Programming Languages:** Python, R, SQL, Java, C, C++, C#, ARM Assembly, Bash, HTML, CSS
- **Machine Learning/Big Data:** Pandas, Machine Learning, Deep Learning, NumPy, matplotlib, scikit-learn, PyTorch, BeautifulSoup4, Request, Selenium, Plotly, FastAPI
- **Development Tools:** Unity, Blender, Gradle, Makefile, Vim, Linux/Debian, VSCode,

PROJECTS

Convolutional Neural Network Image Classification ([Report](#))

Feb 2022

- Developed a custom convolutional neural network with PyTorch to classify 20 categories of food images
- Constructed and trained the neural net with PyTorch and cuda; optimized the network through changing the architecture and the hyperparameters
- Graphed and analyzed the feature maps and the filters with matplotlib

[Twitter Sentiment Analysis API](#)

July 2022

- Developed a configurable LSTM model to classify the sentiment of Twitter tweets into different categories and created an API that returns a response JSON object of the sentiment result with FastAPI
- Trained 1000 different LSTM models with grid search to find the optimal hyperparameters

[Minecraft Mod Development](#)

June 2020 – Dec 2020

- Over 2.3M downloads on [CurseForge](#)
- Developed a plugin that improves/expands the player experience by adding items to interact with in Minecraft
- **Technical Skills:** coded in Java under the Minecraft Forge framework and compiled with Gradle.

[Tiktok Reddit Video Automator](#)

Aug 2022 - Now

- Created a Python script that downloads hottest videos from subreddits with the Reddit API and uploads them to tiktok accounts with Python and Selenium
- Can be deployed to a server and post videos automatically with configurable settings (rest interval, target subreddit, etc.)

iOS Mobile Hockey Game

July 2021 – Today

- Developed a touch-based air hockey game with C# under the Unity game engine with a functional alpha version with a proper game mechanism, scoring system, UI animations, and an AI trained through reinforcement learning with Unity's ML-Agents library
- **Technical Skills:** uses C# scripts to create custom behaviors and trigger events. Used Blender to model the puck, bat, and table. Uses Photoshop to adjust the UI sprites.

EXPERIENCE

Member of National Honors Society

Sept 2019 - June 2020

- Responsible for tutoring lower class students with math and sciences. Improving their general understanding of the subject matter.

President of the Programming Club

Sept 2019 - May 2020

- Responsible for creating presentations and live demonstrations of Java code and presenting them to the club members